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METEOROLOGICAL OBSERVATIONS TAKEN ON THE NILE  
BETWEEN CAIRO AND THE FIRST CATARACT, DURING  
JANUARY AND FEBRUARY, 1873.

BY LIEUT.-COL. R. S. WILLIAMSON,

UNITED STATES CORPS OF ENGINEERS.

(*Read before the American Philosophical Society, September 17, 1875.*)

SAN FRANCISCO, CAL., July 26, 1875.

*To the Secretary of the American Philosophical Society :*

DEAR SIR :

I send you two sheets of Meteorological Observations which I made during January and February, 1873, on the Nile, thinking that they might be considered of sufficient interest to find a place among the printed Proceedings of the American Philosophical Society.

While the general character of the climate of that country is well known, I have not heard of there having been published any regular series of observations of the wet bulb from there ; and the large number of tourists who annually visit that river, the majority of whom are Americans, makes facts concerning it of more than usual interest.

I had had made in Cairo, before starting up the river, a box two feet square, four sides of which were of lattice blinds, so that the instruments, when suspended in it, were perfectly protected from the direct rays of the sun, while the wind passed freely through it. One side of the box was provided with double doors, one or both of which could be opened or closed at pleasure. The box was placed on a table on the upper deck of the boat, and securely fastened to it. The bulbs were about ten feet from the water. Usually there was an awning above. From frequent experiments I found that there was no difference between the readings of the instruments when the doors of the box were open or closed.

The principal instruments were two sensitive identical Thermometers, which read alike when the bulbs were dry. They were made by James Green, of New York, and were of the best construction. There was also a minimum Thermometer, but not of so nice a construction.

The reductions were made by means of the tables in Profession Papers of the Corps of Engineers, No. 15, a copy of which is in the library of the Society.

The boat went up the river as far as Assouan, at the foot of the first Cataract, and six degrees of latitude south from Cairo, and returned.

Yours very truly,

R. S. WILLIAMSON,

Lieut.-Col. United States Engineers.

# METEOROLOGICAL OBSERVATIONS TAKEN ON THE NILE BETWEEN CAIRO AND THE FIRST FALLS

BY LIEUT.-COL. R. S. WILLIAMSON, U. S. Corps of Engineers.

| Date.  |    | Locality.  | Latitude. | Dry Bulb. |        |        |      | Wet Bulb. |        |        |  | Difference. |        |        | Force of Vapor. |        |        | Rel'tve Humidity. |        |        | Dew P. |        |
|--------|----|------------|-----------|-----------|--------|--------|------|-----------|--------|--------|--|-------------|--------|--------|-----------------|--------|--------|-------------------|--------|--------|--------|--------|
|        |    |            |           | 7 A.M.    | 2 P.M. | 9 P.M. | Mean | 7 A.M.    | 2 P.M. | 9 P.M. |  | 7 A.M.      | 2 P.M. | 9 P.M. | 7 A.M.          | 2 P.M. | 9 P.M. | 7 A.M.            | 2 P.M. | 9 P.M. | 7 A.M. | 2 P.M. |
| Jan'y. | 1  | Cairo,     | 30°00'    | 45.       | 63.    | 50.    | 52.7 | 44.       | 51.    | 46.    |  | 1.          | 12.    | 4.     | 0.276           | 0.256  | 0.265  | 92.9              | 44.4   | 73.4   | 42.8   | 40.0   |
| "      | 2  | Benisooef, | 29°10'    | 43.5      | 65.5   | 58.    | 55.7 | 41.       | 49.5   | 46.5   |  | 2.5         | 16.    | 11.5   | .229            | .215   | .213   | 88.1              | 34.4   | 44.1   | 32.0   | 36.0   |
| "      | 3  | "          | 28°19'    | 38.       | 69.    | 56.    | 54.3 | 35.5      | 55.5   | 49.5   |  | 2.5         | 13.5   | 6.5    | .182            | .209   | .282   | 79.3              | 42.3   | 62.8   | 32.0   | 44.0   |
| "      | 4  | "          | "         | 34.       | 69.    | 51.5   | 51.5 | 33.       | 55.    | 47.5   |  | 1.          | 14.    | 4.     | .176            | .289   | .282   | 89.6              | 40.8   | 72.8   | 31.2   | 44.0   |
| "      | 5  | Rhoda,     | "         | 45.5      | 70.    | 54.5   | 56.7 | 41.5      | 55.    | 50.    |  | 4.          | 15.    | 4.5    | .220            | .283   | .307   | 72.0              | 38.6   | 72.0   | 36.9   | 43.0   |
| "      | 6  | Mellawee,  | 27°45'    | 47.       | 67.    | 52.    | 55.3 | 46.       | 54.    | 47.    |  | 1.          | 13.    | 5.     | .298            | .284   | .266   | 92.4              | 42.8   | 68.6   | 44.9   | 43.0   |
| "      | 7  | Manfaloot, | 27°20'    | 41.5      | 66.5   | 51.5   | 53.2 | 38.5      | 53.    | 47.    |  | 3.          | 13.5   | 4.5    | .202            | .269   | .271   | 77.0              | 41.3   | 71.1   | 34.7   | 42.0   |
| "      | 8  | "          | "         | 40.5      | 65.5   | 51.    | 52.3 | 40.       | 55.5   | 47.5   |  | 0.5         | 10.    | 3.5    | .242            | .327   | .287   | 95.9              | 51.9   | 76.6   | 39.3   | 47.0   |
| "      | 9  | Sioot,     | 27°10'    | 40.       | 66.    | 54.    | 53.3 | 39.5      | 56.    | 49.5   |  | 0.5         | 10.    | 4.5    | .237            | .334   | .301   | 95.9              | 52.1   | 72.0   | 38.8   | 47.0   |
| "      | 10 | "          | "         | 44.5      | 64.5   | 51.    | 53.3 | 42.5      | 62.5   | 47.    |  | 2.          | 12.    | 4.     | .249            | .273   | .276   | 84.8              | 45.0   | 73.7   | 40.1   | 42.0   |
| "      | 11 | Girgeh,    | 26°20'    | 44.       | 64.5   | 52.    | 53.5 | 40.5      | 52.    | 45.    |  | 3.5         | 12.5   | 7.     | .215            | .263   | .228   | 74.7              | 43.5   | 78.7   | 36.4   | 41.0   |
| "      | 12 | "          | "         | 41.       | 65.    | 53.    | 53.  | 38.5      | 53.5   | 46.    |  | 2.5         | 11.5   | 7.     | .206            | .288   | .238   | 80.4              | 46.6   | 59.2   | 35.3   | 44.0   |
| "      | 13 | "          | "         | 44.5      | 69.5   | 56.5   | 56.8 | 43.5      | 57.5   | 49.5   |  | 1.          | 12.    | 7.     | .270            | .338   | .278   | 92.0              | 46.8   | 60.7   | 42.3   | 48.0   |
| "      | 14 | Kenah,     | 26°10'    | 46.5      | 64.    | 56.    | 55.5 | 45.       | 51.    | 46.5   |  | 1.5         | 13.    | 9.5    | .281            | .249   | .225   | 88.7              | 41.8   | 50.2   | 43.3   | 40.0   |
| "      | 15 | Negadeh,   | 25°55'    | 49.       | 70.    | 54.    | 57.7 | 45.       | 55.    | 47.5   |  | 4.          | 15.    | 6.5    | .254            | .283   | .258   | 73.0              | 38.6   | 62.0   | 40.7   | 42.0   |
| "      | 16 | Thebes,    | 25°45'    | 43.       | 70.    | 51.    | 54.6 | 39.5      | 55.    | 45.    |  | 3.5         | 15.    | 6.     | .206            | .283   | .236   | 74.4              | 38.6   | 61.1   | 35.3   | 43.0   |
| "      | 17 | Erment,    | 25°40'    | 42.       | 75.    | 57.    | 58.  | 40.       | 60.    | 47.5   |  | 2.          | 15.    | 9.5    | .225            | .351   | .236   | 84.3              | 40.5   | 50.7   | 37.5   | 49.0   |
| "      | 18 | Edfoo,     | 25°00'    | 46.       | 72.    | 59.5   | 59.2 | 44.       | 58.    | 49.0   |  | 2.          | 14.    | 10.5   | .264            | .330   | .244   | 85.1              | 42.0   | 48.1   | 41.7   | 47.0   |
| "      | 19 | Kom Ombo,  | 24°35'    | 50.       | 72.    | 61.    | 61.  | 47.5      | 54.    | 50.    |  | 2.5         | 18.    | 11.    | .298            | .253   | .252   | 82.5              | 32.2   | 47.0   | 44.8   | 40.0   |
| "      | 20 | Assouan,   | 24°00'    | 49.       | 71.    | 62.    | 60.7 | 46.       | 56.    | 55.5   |  | 3.          | 15.    | 6.5    | .275            | .296   | .360   | 79.1              | 39.1   | 64.8   | 42.8   | 44.0   |
| "      | 21 | "          | "         | 52.5      | 74.    | 63.    | 63.2 | 50.5      | 57.    | 50.    |  | 2.          | 17.    | 13.    | .341            | .295   | .238   | 86.3              | 35.3   | 41.4   | 48.5   | 44.0   |
| "      | 22 | "          | "         | 50.       | 74.    | 68.    | 64.  | 45.       | 59.    | 54.5   |  | 5.          | 15.    | 13.5   | .245            | .336   | .286   | 67.8              | 40.1   | 41.8   | 39.7   | 48.0   |
| "      | 23 | "          | "         | 53.5      | 75.5   | 67.    | 65.3 | 48.5      | 58.5   | 54.    |  | 5.          | 17.    | 13.    | .284            | .315   | .284   | 69.1              | 35.7   | 42.8   | 43.5   | 46.0   |
| "      | 24 | "          | "         | 56.       | 75.    | 65.    | 65.3 | 49.5      | 58.    | 55.    |  | 6.5         | 17.    | 10.    | .282            | .308   | .320   | 62.8              | 35.6   | 51.7   | 43.4   | 45.0   |
| "      | 25 | Kom Ombo,  | 24°35'    | 41.5      | 76.    | 63.5   | 60.3 | 39.5      | 58.5   | 56.    |  | 2.          | 17.5   | 7.5    | .220            | .310   | .357   | 84.1              | 34.8   | 61.0   | 37.0   | 46.0   |
| "      | 26 | Edfoo,     | 25°00'    | 53.5      | 79.5   | 59.5   | 64.2 | 49.5      | 59.    | 50.5   |  | 4.          | 20.5   | 9.     | .306            | .299   | .272   | 74.5              | 29.7   | 53.5   | 45.5   | 45.0   |
| "      | 27 | "          | "         | 52.5      | 77.    | 57.    | 62.2 | 48.5      | 57.5   | 49.    |  | 4.          | 19.5   | 8.     | .294            | .286   | .264   | 74.2              | 30.9   | 56.6   | 44.5   | 43.0   |
| "      | 28 | Esné,      | 25°20'    | 55.       | 71.    | 60.5   | 62.2 | 49.       | 56.    | 48.    |  | 6.          | 15.    | 12.5   | .281            | .296   | .221   | 64.7              | 39.1   | 41.9   | 43.2   | 44.0   |
| "      | 29 | "          | "         | 47.       | 72.    | 58.5   | 59.2 | 43.5      | 57.    | 49.5   |  | 3.5         | 15.    | 9.     | .244            | .309   | .261   | 75.7              | 39.4   | 53.2   | 39.6   | 45.0   |
| "      | 30 | "          | "         | 44.5      | 77.    | 58.5   | 60.  | 40.5      | 56.    | 47.    |  | 4.          | 21.    | 11.5   | .210            | .260   | .218   | 71.6              | 28.0   | 44.4   | 35.8   | 41.0   |
| "      | 31 | "          | "         | 56.       | 72.    | 61.5   | 63.2 | 48.       | 57.5   | 53.5   |  | 8.          | 14.5   | 8.     | .252            | .319   | .318   | 56.2              | 40.6   | 58.1   | 40.5   | 46.0   |
| Mean   |    |            |           | 46.3      | 70.4   | 57.2   | 58.0 | 43.3      | 55.6   | 49.2   |  | 3.0         | 14.8   | 8.0    | 0.230           | 0.293  | 0.269  | 79.6              | 39.8   | 58.0   | 40.0   | 44.0   |

|       |    |                 |        |      |      |      |      |      |      |      |  |     |      |      |       |       |       |      |      |      |      |      |
|-------|----|-----------------|--------|------|------|------|------|------|------|------|--|-----|------|------|-------|-------|-------|------|------|------|------|------|
| Feb'y | 1  | Erment,         | 25°40' | 52.  | 76.  | 60.5 | 62.8 | 48.5 | 61.  | 55.  |  | 3.5 | 15.  | 5.5  | 0.299 | 0.366 | 0.363 | 77.0 | 40.8 | 68.9 | 44.9 | 50.0 |
| "     | 2  | "               | "      | 58.  | 73.  | 63.5 | 64.8 | 54.5 | 60.5 | 57.5 |  | 3.5 | 12.5 | 6.   | .379  | .378  | .395  | 78.6 | 46.6 | 67.4 | 51.3 | 51.0 |
| "     | 3  | "               | "      | 58.5 | 73.  | 58.  | 63.2 | 51.  | 57.  | 49.  |  | 7.5 | 16.  | 9.   | .291  | .302  | .256  | 59.3 | 37.3 | 53.0 | 44.3 | 45.0 |
| "     | 4  | "               | "      | 48.5 | 71.  | 61.  | 60.2 | 46.  | 56.5 | 54.  |  | 2.5 | 14.5 | 7.   | .280  | .305  | .334  | 82.2 | 40.0 | 62.2 | 43.3 | 45.0 |
| "     | 5  | "               | "      | 50.5 | 72.  | 65.  | 62.5 | 49.5 | 59.  | 53.5 |  | 1.0 | 13.  | 11.5 | .341  | .352  | .288  | 92.7 | 44.8 | 46.6 | 48.4 | 49.0 |
| "     | 6  | Thebes,         | 25°45' | 48.5 | 76.  | 66.5 | 63.7 | 45.  | 62.  | 55.5 |  | 3.5 | 14.  | 11.  | .259  | .389  | .317  | 75.9 | 43.4 | 48.9 | 41.2 | 52.0 |
| "     | 7  | "               | "      | 60.5 | 73.  | 63.  | 65.5 | 51.5 | 57.  | 51.5 |  | 9.0 | 16.  | 11.5 | .284  | .302  | .265  | 53.9 | 37.3 | 46.0 | 43.6 | 45.0 |
| "     | 8  | "               | "      | 50.  | 77.5 | 60.  | 62.5 | 45.  | 59.  | 51.5 |  | 5.  | 18.5 | 8.5  | .245  | .311  | .288  | 67.8 | 33.1 | 55.7 | 39.7 | 46.0 |
| "     | 9  | Kenah,          | 26°10' | 52.5 | 73.5 | 57.5 | 61.2 | 49.  | 57.5 | 51.  |  | 3.5 | 16.  | 6.5  | .305  | .308  | .300  | 76.6 | 37.4 | 63.4 | 45.4 | 45.0 |
| "     | 10 | "               | "      | 49.5 | 78.  | 62.  | 63.2 | 45.  | 58.  | 56.  |  | 4.5 | 20.  | 6.   | .249  | .289  | .372  | 70.4 | 30.2 | 67.1 | 40.2 | 44.0 |
| "     | 11 | "               | "      | 50.  | 79.  | 60.  | 63.0 | 47.5 | 61.  | 54.  |  | 2.5 | 18.  | 6.   | .298  | .343  | .344  | 82.6 | 34.6 | 66.4 | 44.8 | 48.0 |
| "     | 12 | Bellianeh,      | 26°10' | 52.5 | 76.  | 58.5 | 62.3 | 46.  | 58.  | 51.5 |  | 6.5 | 18.  | 7.5  | .242  | .302  | .302  | 61.2 | 33.7 | 61.4 | 39.4 | 45.0 |
| "     | 13 | "               | "      | 52.5 | 84.  | 66.  | 67.5 | 49.5 | 63.  | 60.5 |  | 3.  | 21.  | 5.5  | .317  | .350  | .449  | 80.0 | 30.0 | 40.4 | 46.4 | 49.0 |
| "     | 14 | Eckmine,        | 26°30' | 62.5 | 92.  | 75.  | 76.5 | 57.5 | 67.  | 57.  |  | 5.  | 25.  | 18.  | .406  | .383  | .289  | 71.8 | 25.5 | 33.4 | 53.2 | 51.0 |
| "     | 15 | Souhag,         | 26°30' | 72.  | 77.  | 62.5 | 70.5 | 61.  | 60.5 | 54.5 |  | 11. | 16.5 | 8.   | .400  | .346  | .331  | 50.9 | 37.4 | 58.5 | 52.7 | 48.0 |
| "     | 16 | "               | "      | 55.  | 84.5 | 53.  | 57.5 | 49.5 | 51.5 | 45.5 |  | 5.5 | 13.  | 7.5  | .291  | .254  | .229  | 67.2 | 42.0 | 56.9 | 44.2 | 40.0 |
| "     | 17 | "               | "      | 48.  | 65.  | 56.5 | 56.5 | 42.  | 52.  | 51.  |  | 6.  | 13.  | 5.5  | .207  | .260  | .310  | 61.8 | 42.2 | 67.8 | 35.4 | 41.0 |
| "     | 18 | Sioot,          | 27°10' | 43.  | 63.5 | 49.  | 51.8 | 39.  | 50.  | 43.  |  | 4.  | 13.5 | 6.   | .197  | .235  | .216  | 71.1 | 40.1 | 62.2 | 34.2 | 38.0 |
| "     | 19 | "               | "      | 41.  | 59.  | 50.5 | 50.2 | 39.5 | 47.  | 44.5 |  | 1.5 | 12.  | 5.5  | .226  | .215  | .231  | 87.9 | 42.9 | 62.8 | 37.6 | 36.0 |
| "     | 20 | "               | "      | 49.  | 60.  | 54.  | 54.3 | 44.5 | 48.5 | 46.5 |  | 4.5 | 11.5 | 7.5  | .244  | .232  | .239  | 70.2 | 44.9 | 57.4 | 39.6 | 38.0 |
| "     | 21 | Beni-Hassen,    | 28°00' | 49.5 | 64.  | 51.  | 53.2 | 44.  | 52.  | 45.  |  | 0.5 | 12.  | 6.   | .282  | .267  | .236  | 96.1 | 44.8 | 63.1 | 43.4 | 42.0 |
| "     | 22 | "               | "      | 45.  | 67.  | 60.  | 57.3 | 44.  | 56.  | 52.5 |  | 1.  | 11.  | 7.5  | .276  | .323  | .309  | 92.2 | 49.1 | 59.8 | 42.8 | 47.0 |
| "     | 23 | "               | "      | 51.  | 69.5 | 58.  | 59.5 | 49.5 | 57.  | 52.  |  | 1.5 | 12.5 | 6.   | .334  | .327  | .318  | 89.4 | 45.2 | 65.3 | 47.9 | 47.0 |
| "     | 24 | "               | "      | 49.5 | 70.  | 59.  | 59.5 | 47.5 | 56.5 | 52.  |  | 2.  | 13.5 | 7.   | .304  | .312  | .308  | 85.7 | 42.6 | 61.6 | 45.3 | 46.0 |
| "     | 25 | "               | "      | 48.  | 68.5 | 59.  | 58.5 | 46.  | 56.5 | 54.5 |  | 2.  | 12.  | 4.5  | .286  | .324  | .367  | 85.3 | 46.5 | 73.5 | 43.8 | 47.0 |
| "     | 26 | Neghoda,        | 29°00' | 51.5 | 72.  | 53.5 | 59.0 | 50.5 | 56.5 | 48.5 |  | 1.  | 15.5 | 5.   | .354  | .299  | .284  | 92.8 | 38.9 | 69.1 | 49.5 | 44.0 |
| "     | 27 | Benisooef,      | 29°10' | 47.5 | 69.5 | 58.  | 58.3 | 46.5 | 56.5 | 53.  |  | 1.  | 13.  | 5.   | .304  | .316  | .341  | 92.3 | 43.9 | 70.7 | 45.4 | 46.0 |
| "     | 28 | Sakhara,        | 29°45' | 53.5 | 74.5 | 58.  | 62.0 | 52.  | 58.  | 52.  |  | 1.5 | 16.5 | 6.   | .367  | .311  | .318  | 89.8 | 36.6 | 65.8 | 50.5 | 46.0 |
| "     | 29 | (Near Memphis,) | "      |      |      |      |      |      |      |      |  |     |      |      |       |       |       |      |      |      |      |      |
| Mean  |    |                 |        | 51.6 | 72.1 | 59.2 | 61.0 | 47.9 | 57.0 | 51.9 |  | 3.7 | 15.1 | 7.4  | 0.295 | 0.311 | 0.307 | 77.2 | 39.7 | 60.9 | 44.2 | 45.0 |

# ON THE NILE BETWEEN CAIRO AND THE FIRST CATARACT, DURING JANUARY, 1873.

LIEUT.-COL. R. S. WILLIAMSON, U. S. Corps of Engineers.

| lb.  | Difference. |        |        | Force of Vapor. |        |        | Rel'tve Humidity. |        |        | Dew Point. |        |        | Clouds. |             |              | Winds.      |        |        | Remarks.   |            |
|------|-------------|--------|--------|-----------------|--------|--------|-------------------|--------|--------|------------|--------|--------|---------|-------------|--------------|-------------|--------|--------|------------|------------|
|      | 7 A.M.      | 2 P.M. | 9 P.M. | 7 A.M.          | 2 P.M. | 9 P.M. | 7 A.M.            | 2 P.M. | 9 P.M. | 7 A.M.     | 2 P.M. | 9 P.M. | 7 A.M.  | 2 P.M.      | 9 P.M.       | 7 A.M.      | 2 P.M. | 9 P.M. | Min.       | Dew.       |
| 46.  | 1.          | 12.    | 4.     | 0.276           | 0.256  | 0.265  | 92.2              | 44.4   | 73.4   | 42.8       | 40.8   | 41.8   | Clear.  | Cir. 3.     | Clear.       | N. 2.       | N. 4.  | N. 2.  | Min. 40.5. | Dew.       |
| 46.5 | 2.5         | 16.    | 11.5   | .229            | .215   | .213   | 88.1              | 34.4   | 44.1   | 38.0       | 36.5   | 36.1   | "       | "           | "            | " 1.        | " 4.   | " 4.   | " 36.5.    |            |
| 49.5 | 2.5         | 13.5   | 6.5    | .182            | .209   | .282   | 79.3              | 42.3   | 62.8   | 32.1       | 44.9   | 42.4   | "       | Cir. cu. 4. | "            | " 1.        | " 1.   | " 0.   |            |            |
| 47.5 | 1.          | 14.    | 4.     | .176            | .289   | .282   | 89.6              | 40.8   | 72.8   | 31.2       | 44.1   | 43.3   | "       | Clear.      | "            | S. 1.       | S. 1.  | " 0.   |            |            |
| 50.  | 4.          | 15.    | 4.5    | .220            | .283   | .307   | 72.0              | 38.6   | 62.2   | 36.9       | 43.5   | 45.7   | "       | "           | "            | " 0.        | N. 2.  | " 0.   |            |            |
| 47.  | 1.          | 13.    | 5.     | .298            | .284   | .266   | 92.4              | 42.8   | 78.6   | 44.9       | 43.6   | 41.9   | "       | "           | "            | " 0.        | N. 3.  | " 0.   |            |            |
| 47.5 | 3.          | 13.5   | 4.5    | .202            | .269   | .271   | 77.0              | 41.3   | 71.1   | 34.7       | 42.2   | 42.3   | "       | Cu. st. 9.  | Cir. cu. 7.  | " 0.        | N. 3.  | " 0.   |            |            |
| 47.5 | 0.5         | 10.    | 3.5    | .242            | .327   | .287   | 95.9              | 51.9   | 76.6   | 39.3       | 47.3   | 43.8   | "       | Clear.      | Clear.       | " 0.        | N. 3.  | " 0.   |            |            |
| 49.5 | 0.5         | 10.    | 4.5    | .237            | .334   | .301   | 95.9              | 52.1   | 72.0   | 38.8       | 47.9   | 45.1   | "       | Cir. 2.     | "            | " 0.        | N. 3.  | " 0.   |            |            |
| 47.  | 2.          | 12.    | 4.     | .249            | .273   | .276   | 84.8              | 45.0   | 73.7   | 40.1       | 42.6   | 42.5   | "       | Clear.      | "            | " 0.        | N. 2.  | " 5.   |            |            |
| 45.  | 3.5         | 12.5   | 7.     | .215            | .263   | .228   | 74.7              | 43.5   | 78.7   | 36.4       | 41.6   | 37.9   | "       | "           | "            | N. 4.       | N. 5.  | " 5.   |            |            |
| 46.  | 2.5         | 11.5   | 7.     | .206            | .288   | .238   | 80.4              | 46.6   | 59.2   | 35.3       | 44.0   | 39.0   | "       | "           | "            | N. 2.       | N. 2.  | " 2.   |            |            |
| 49.5 | 1.          | 12.    | 7.     | .270            | .338   | .278   | 92.0              | 46.8   | 60.7   | 42.3       | 48.2   | 43.0   | "       | Cu. 1.      | "            | " 2.        | N. 1.  | " 1.   |            |            |
| 46.5 | 1.5         | 13.    | 9.5    | .281            | .249   | .225   | 88.7              | 41.8   | 50.2   | 43.3       | 40.2   | 37.6   | "       | Cir. cu. 2. | "            | N. 2.       | N. 2.  | " 1.   |            |            |
| 47.5 | 4.          | 15.    | 6.5    | .254            | .283   | .258   | 73.0              | 38.6   | 62.0   | 40.7       | 42.5   | 41.1   | "       | Clear.      | "            | N. 3.       | N. 2.  | " 1.   |            |            |
| 45.  | 3.5         | 15.    | 6.     | .206            | .283   | .236   | 74.4              | 38.6   | 63.1   | 35.3       | 43.5   | 38.8   | "       | "           | "            | " 1.        | N. 1.  | " 1.   |            |            |
| 47.5 | 2.          | 15.    | 9.5    | .225            | .351   | .236   | 84.3              | 40.5   | 50.7   | 37.5       | 49.2   | 38.7   | "       | "           | "            | " 1.        | N. 1.  | " 1.   |            |            |
| 49.0 | 2.          | 14.    | 10.5   | .264            | .330   | .244   | 85.1              | 42.0   | 48.1   | 41.7       | 47.5   | 39.7   | "       | "           | "            | " 1.        | N. 1.  | " 1.   |            |            |
| 50.  | 2.5         | 18.    | 11.    | .298            | .253   | .252   | 82.5              | 32.2   | 47.0   | 44.8       | 40.5   | 40.4   | "       | "           | "            | " 1.        | N. 4.  | " 1.   |            |            |
| 55.5 | 3.          | 15.    | 6.5    | .275            | .296   | .360   | 79.1              | 39.1   | 64.8   | 42.8       | 44.6   | 49.9   | "       | "           | "            | " 1.        | N. 1.  | " 1.   |            |            |
| 50.  | 2.          | 17.    | 13.    | .341            | .295   | .286   | 86.3              | 35.3   | 41.4   | 48.5       | 44.6   | 39.0   | "       | "           | "            | " 1.        | N. 1.  | " 1.   |            |            |
| 54.5 | 5.          | 15.    | 13.5   | .245            | .336   | .238   | 67.8              | 40.1   | 41.8   | 39.7       | 48.1   | 43.8   | "       | "           | "            | " 1.        | N. 1.  | " 1.   |            |            |
| 54.  | 5.          | 17.    | 13.    | .284            | .315   | .284   | 69.1              | 35.7   | 42.8   | 43.5       | 46.3   | 42.6   | "       | Cir. 3.     | "            | N. 1.       | " 1.   | " 1.   |            |            |
| 55.  | 6.5         | 17.    | 10.    | .282            | .308   | .320   | 62.8              | 35.6   | 51.7   | 43.4       | 45.8   | 46.8   | "       | Clear.      | "            | " 1.        | " 1.   | " 1.   |            |            |
| 56.  | 2.          | 17.5   | 7.5    | .220            | .310   | .357   | 84.1              | 34.8   | 61.0   | 37.0       | 46.1   | 49.8   | "       | "           | "            | N. 1.       | " 2.   | " 3.   |            |            |
| 50.5 | 4.          | 20.5   | 9.     | .306            | .299   | .272   | 74.5              | 29.7   | 53.5   | 45.5       | 45.0   | 42.5   | "       | "           | "            | N. 1.       | " 2.   | " 3.   |            |            |
| 49.  | 4.          | 19.5   | 8.     | .294            | .286   | .264   | 74.2              | 30.9   | 56.6   | 44.5       | 43.8   | 41.6   | "       | "           | "            | N. 1.       | " 1.   | " 1.   |            |            |
| 48.  | 6.          | 15.    | 12.5   | .281            | .296   | .221   | 64.7              | 39.1   | 41.9   | 43.2       | 44.6   | 37.0   | "       | "           | "            | S. 1.       | N. 3.  | " 3.   |            |            |
| 49.5 | 3.5         | 15.    | 9.     | .244            | .309   | .261   | 75.7              | 39.4   | 53.2   | 39.6       | 45.8   | 41.4   | "       | Cir. 7.     | "            | " 1.        | " 1.   | " 1.   | Min. 40.   |            |
| 47.  | 4.          | 21.    | 11.5   | .210            | .260   | .218   | 71.6              | 28.0   | 44.4   | 35.8       | 41.3   | 36.7   | "       | Clear.      | "            | " 1.        | " 1.   | " 1.   | " 41.      |            |
| 53.5 | 8.          | 14.5   | 8.     | .252            | .319   | .318   | 56.2              | 40.6   | 58.1   | 40.5       | 46.6   | 46.5   | "       | "           | "            | " 1.        | " 1.   | " 1.   | " 50.5.    |            |
| 49.2 | 3.0         | 14.8   | 8.0    | 0.230           | 0.293  | 0.269  | 79.6              | 39.8   | 58.0   | 44.0       | 44.3   | 42.0   | "       | "           | "            | " 1.        | " 1.   | " 1.   |            |            |
| 55.  | 3.5         | 15.    | 5.5    | 0.299           | 0.366  | 0.363  | 77.0              | 40.8   | 68.9   | 44.9       | 50.4   | 50.2   | Clear.  | Clear.      | Clear.       | N. 1.       | N. 1.  | N. 1.  | 0.         | Min. 46°5. |
| 57.5 | 3.5         | 12.5   | 6.     | .379            | .378   | .395   | 78.6              | 46.6   | 67.4   | 51.3       | 51.2   | 52.4   | "       | "           | "            | " 1.        | " 1.   | " 1.   | " 50°      |            |
| 49.  | 7.5         | 16.    | 9.     | .291            | .302   | .256   | 59.3              | 37.3   | 53.0   | 44.3       | 45.2   | 40.5   | "       | "           | "            | " 1.        | " 1.   | " 1.   | " 54°      |            |
| 54.  | 2.5         | 14.5   | 7.     | .280            | .305   | .334   | 82.2              | 40.3   | 62.2   | 43.3       | 45.5   | 47.9   | "       | "           | "            | " 1.        | " 1.   | " 1.   | " 45°      |            |
| 53.5 | 1.0         | 13.    | 11.5   | .341            | .352   | .288   | 92.7              | 44.8   | 48.6   | 48.4       | 49.2   | 44.0   | "       | "           | "            | " 1.        | " 1.   | " 1.   | " 45°      |            |
| 55.5 | 3.5         | 14.    | 11.    | .259            | .389   | .317   | 75.9              | 43.4   | 48.9   | 41.2       | 52.1   | 46.6   | "       | "           | "            | N. 1.       | N. 2.  | N. 3.  | " 45°5.    |            |
| 51.5 | 9.0         | 16.    | 11.5   | .284            | .302   | .265   | 53.9              | 37.3   | 46.0   | 43.6       | 45.2   | 41.7   | "       | "           | "            | N. 2.       | N. 2.  | N. 3.  | " 45°5.    |            |
| 51.5 | 5.          | 18.5   | 8.5    | .245            | .311   | .288   | 67.8              | 33.1   | 55.7   | 39.7       | 46.1   | 44.0   | "       | Cir. 5.     | Cir. 5.      | " 0.        | " 0.   | " 0.   | " 48°      |            |
| 51.  | 3.5         | 16.    | 6.5    | .305            | .308   | .300   | 76.6              | 37.4   | 63.4   | 45.4       | 45.7   | 45.1   | "       | Cir. cu. 8. | Cir. cu. 2.  | " 0.        | " 0.   | " 0.   | " 48°      |            |
| 56.  | 4.5         | 20.    | 6.     | .249            | .289   | .372   | 70.4              | 30.2   | 67.1   | 40.2       | 44.1   | 50.8   | "       | Cir. 2.     | Clear.       | " 0.        | " 0.   | " 0.   | " 48°      |            |
| 54.  | 2.5         | 18.    | 6.     | .298            | .343   | .344   | 82.6              | 34.6   | 66.4   | 44.8       | 48.6   | 48.7   | "       | Clear.      | "            | N. 1.       | " 1.   | " 1.   | " 48°      |            |
| 51.5 | 6.5         | 18.    | 7.5    | .242            | .302   | .302   | 61.2              | 33.7   | 61.4   | 39.4       | 45.2   | 45.2   | "       | Hazy.       | Cir. 4.      | " 0.        | " 0.   | " 0.   | " 51°      | Max. 86°   |
| 60.5 | 3.          | 21.    | 5.5    | .317            | .350   | .449   | 80.0              | 30.0   | 40.4   | 46.4       | 49.1   | 56.0   | "       | Clear.      | Clear.       | " 0.        | " 0.   | " 0.   | " 57°      |            |
| 57.  | 5.          | 25.    | 18.    | .406            | .383   | .289   | 71.8              | 25.5   | 33.4   | 53.2       | 51.6   | 44.0   | "       | Clear.      | Cir. cu. 8.  | Cir. cu. 5. | S. 1.  | S. 2.  | " 67°      |            |
| 54.5 | 11.         | 16.5   | 8.     | .400            | .346   | .331   | 50.9              | 37.4   | 58.5   | 52.7       | 48.9   | 47.6   | "       | Cir. cu. 8. | Cir. cu. 10. | Cir. cu. 7. | S. 1.  | N. 5.  | " 52°      |            |
| 45.5 | 5.5         | 13.    | 7.5    | .291            | .254   | .229   | 67.2              | 42.0   | 56.9   | 44.2       | 40.7   | 48.0   | "       | Cir. cu. 8. | Clear.       | " 0.        | S. 1.  | N. 6.  | " 42°      |            |
| 51.  | 6.          | 13.    | 5.5    | .207            | .260   | .310   | 61.8              | 42.2   | 67.8   | 35.4       | 41.3   | 45.9   | "       | Clear.      | Cir. cu. 3.  | " 0.        | N. 2.  | N. 4.  | " 39°5.    |            |
| 43.  | 4.          | 13.5   | 6.     | .197            | .235   | .216   | 71.1              | 40.1   | 62.2   | 34.2       | 38.7   | 36.5   | "       | "           | "            | " 0.        | N. 4.  | " 4.   | " 38°      |            |
| 44.5 | 1.5         | 12.    | 5.5    | .226            | .215   | .231   | 87.9              | 42.9   | 62.8   | 37.6       | 36.3   | 38.2   | "       | "           | "            | N. 5.       | N. W   | N. 3.  | " 38°      |            |
| 46.5 | 4.5         | 11.5   | 7.5    | .244            | .232   | .232   | 70.2              | 44.9   | 57.4   | 39.6       | 38.4   | 39.1   | "       | Cu. 5.      | Clear.       | " 0.        | N. 6.  | N. 5.  | " 38°      |            |
| 45.  | 0.5         | 12.    | 5.     | .282            | .267   | .236   | 96.1              | 44.8   | 63.1   | 43.4       | 42.0   | 38.8   | "       | "           | "            | N. 3.       | N. 4.  | N. 1.  | " 37°5.    |            |
| 52.5 | 1.          | 11.    | 7.5    | .276            | .325   | .309   | 92.2              | 49.1   | 59.8   | 42.8       | 47.2   | 45.9   | "       | "           | "            | " 0.        | N. 3.  | N. 4.  | " 48°      |            |
| 52.  | 1.5         | 12.5   | 6.     | .334            | .327   | .318   | 89.4              | 45.2   | 65.3   | 47.9       | 47.3   | 46.6   | "       | "           | "            | N. 4.       | N. 3.  | N. 3.  | " 45°      |            |
| 52.  | 2.          | 13.5   | 7.     | .304            | .312   | .308   | 85.7              | 42.6   | 61.6   | 45.3       | 46.1   | 45.8   | "       | "           | "            | " 0.        | N. 3.  | N. 3.  | " 43°      |            |
| 54.5 | 2.          | 12.    | 4.5    | .286            | .324   | .367   | 85.3              | 46.5   | 73.5   | 43.8       | 47.0   | 50.5   | "       | "           | "            | " 0.        | N. 3.  | N. 3.  | " 45°      |            |
| 48.5 | 1.          | 15.5   | 5.     | .354            | .299   | .284   | 92.8              | 38.2   | 69.1   | 49.5       | 44.9   | 43.5   | "       | Cir. 7.     | "            | " 0.        | N. 3.  | N. 3.  | " 45°      |            |
| 53.  | 1.          | 13.    | 5.     | .304            | .316   | .341   | 92.3              | 43.9   | 70.7   | 45.4       | 46.4   | 48.5   | "       | Cir. 2.     | "            | " 0.        | N. 3.  | N. 3.  | " 46°5.    |            |
| 52.  | 1.5         | 16.5   | 6.     | .367            | .311   | .318   | 89.8              | 36.6   | 65.8   | 50.5       | 46.0   | 46.6   | "       | Clear.      | "            | " 0.        | N. 3.  | N. 3.  | " 46°5.    |            |
| 51.9 | 3.7         | 15.1   | 7.4    | 0.295           | 0.311  | 0.307  | 77.2              | 39.7   | 60.9   | 44.2       | 45.7   | 45.3   | "       | "           | "            | " 0.        | N. 3.  | N. 3.  | " 46°5.    |            |